L 06165-67   EWT(1)/FSS-2   TT/GW

ACC NR: AP6032853   SOURCE CODE: UR/0020/66/170/003/0560/0560

AUTHOR: Vakhnin, V. M.; Zmiyevskaya, G.I.

ORG: none

TITLE: Stratified and faceted forms in panoramas obtained by the Luna-9 station

SOURCE: AN SSSR. Doklady, v. 170, no. 3, 1966, 560 and insert facing p. 560

TOPIC TAGS: lunar surface, moon, lunar study, lunar station/ Luna-9 LUNAR PHOTOGRAPHY, SPACE STATION, SPACE STATION

ABSTRACT: The complicated structures of characteristic and repeated forms of the lunar surface on panoramic pictures obtained by the Soviet lunar station "Luna-9" are described. Among these are forms which can be characterized as complex polyhedrons consisting of small flat regions. In many places on photographs the boundary between the light and the shadow consists of straight lines cast by objects with straight and flat faces. The first figure in the text shows the blocked structure formed by polyhedrons. The second figure contains several stratified structures which are bordered by two parallel and nearly vertical faces of large dimensions. Both ends of these structures have an irregular shape, but in many cases show indented surfaces.

UDC: 550.2

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ACC NR: AP6032853

The strata were estimated to be 0.8--1.5 cm thick. The third figure shows a part of the first figure with a prominent rock having an indented surface and funnel-shaped pits. The other part of the fragment consists of rocks with indented surfaces and irregularly shaped sides. Based on the lunar photographs, it is concluded that the lunar surface consists of many stratified rocks. Orig. art. has: 3 figures.

SUB CODE: 03/ SUBM DATE: 14 Jun66/ ORIG REF: 001/ OTH REF: 000

Card   2/2 mₑₑ

KEDROV, L.V.; KACHKO, I.L.; KOZLOVA, Z.V.; RUBASHKINA, T.S.;
        SIMONOV, I.G.; LUPEKIN, L.A.; BORISOVA, N.V.; FETISOVA,
        N.A.; VAYSBERG, I.Ye.; SUCHKOV, V.G.; KHLEMNIKOV, N.S.;
        FILATOV, M.F., red.; ZMIYEVSKAYA, L.G., red.

        [Flexible footwear] Gibkaia obuv'. Moskva, 1962. 38 p.
                                              (MIRA 17:8)
        1. TSentral'nyy institut nauchno-tekhnicheskoy informatsii
        legkoy promyshlennosti.

NIKITIN, G.N., inzh.; ZMIYEVSKAYA, L.G., red.

    [Hair removal from rabbit skins unsuitable for processing
    as fur peltry] Sniatie pukha so shkurok krolika, neprigod-
    nykh dlia pererabotki na meh. Moskva, 1964. 21 p.
                                 (MIRA 18:4)
    1. Moscow. TSentral'nyy institut nauchno-tekhnicheskoy in-
    formatsii legkoy promyshlennosti.

KARASIK, Z.S.; MALEVANNYY, A.I.; OKUN', B.D.; TRUSHIN, S.A.;
MURAV'YEVA, M.I., red.; ZMIYEVSKAYA, L.G., red.

[Modernization of technological equipment in shoe
factories] Modernizatsiia tekhnologicheskogo oborudovaniia
na obuvnykh predpriiatiiakh. Moskva, 1962. 67 p.
(MIRA 17:5)

1. Moscow. TSentral'nyy institut nauchno-tekhnicheskoy in-
formatsii legkoy promyshlennosti.

PIMENOV, V.I., kand. tekhn. nauk; FILATOV, M.A., red.; ZMIYEVSKAYA,
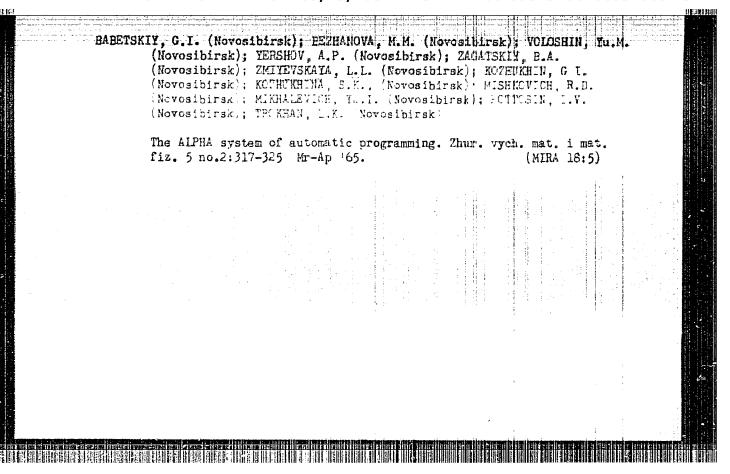L.G., red.; BRATISHKO, L.V., tekhn. red.

[Improving the cementing process of assembly in shoe
manufacture] Sovershenstvovanie kleevykh metodov krep-
leniia v obuvnom proizvodstve. Moskva, 1963. 52 p.
(MIRA 16:11)
1. Moscow. TSentral'nyy institut nauchno-tekhnicheskoy
informatsii legkoy promyshlennosti.
(Shoe manufacture)   (Adhesives)

ZMIYEVSKIY, I.A.; YEGOSHIN, Ye.A.

Some problems in the assembly of boiler units. Energ.stroi.
no.24:65-73 '61.   (MIRA 15:4)

1. Starshiy proizvoditel' rabot montazhnogo uchastka tresta
"Sevzapenergomontazh" (for Zmiyevskiy). 2. Nachal'nik
Proizvodstvenno-tekhnicheskogo otdela montazhnogo uchastka
tresta "Sevzapenergomontazh" (for Yegoshin).
  (Narva region--Electric power plants--Design and construction)
                             (Boilers)

BABETSKIY, G.I. (Novosibirsk); BEZHANOVA, M.M. (Novosibirsk); VOLOSHIN, Yu.M.
(Novosibirsk); YERSHOV, A.P. (Novosibirsk); ZAGATSKIY, B.A.
(Novosibirsk); ZMIYEVSKAYA, L.L. (Novosibirsk); KOZHUKHIN, G.I.
(Novosibirsk); KOZHUKHINA, S.K., (Novosibirsk); MISHKOVICH, R.D.
(Novosibirsk); MIKHALEVICH, Yu.I. (Novosibirsk); POTOSIN, I.V.
(Novosibirsk); TROKHAN, L.K. (Novosibirsk)

The ALPHA system of automatic programming. Zhur. vych. mat. i mat.
fiz. 5 no.2:317-325 Mr-Ap '65.   (MIRA 18:5)

ZMIYEVSKAYA, L.

L 44598-65   E-T(4)/EED-2/EWP(1)   Pq-4/Pg-4/Fk-4   IJP(c)   SB/GG
UR/0208/65/005/002/0317/0325

ACCESSION NR: AP5009396   51

AUTHOR: Babetskiy, G. I. (Novosibirsk); Bezhanova, M. M. (Novosibirsk);
Voloshin, Yu. M. (Novosibirsk); Yershov, A. P. (Novosibirsk); Zagatskiy, B. A.
(Novosibirsk); Zmiyevskaya, L. L. (Novosibirsk); Kozhukhin, G. I. (Novosibirsk);
Kozhukhina, S. K. (Novosibirsk); Mishkovich, R. D. (Novosibirsk); Mikhalevich,
Yu. I. (Novosibirsk); Pottosin, I. V. (Novosibirsk); Trokhan, L. K. (Novosibirsk)

TITLE: AL'FA automatic programming system

SOURCE: Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, v. 5, no. 2,
1965, 317-325

TOPIC TAGS: automatic computer programming, computer language, computer system,
machine translation, computer/AL'FA computer programming, AL'FA computer
language, AL'FA computer system

ABSTRACT: This article presents a detailed description of the AL'FA Automatic
Programming System which translates from an ALGOL type language.
The AL'FA System was developed by a group of twelve scientists at the
Computing Center of the Siberian Branch of the Academy of Sciences USSR
and is intended for the electronic computer of the same computing center.

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ACCESSION NR: AP5009396

which has the following characteristics: three-address, floating-point, one index register, an immediate access memory of 4096 45-bit words, three magnetic drums with a total storage capacity of 12,288 words, four magnetic tape units with 75,000 words storage capacity each, punch card input and output, average speed 20,000 operations per second.

The AL' FA System consists of the following components: 1) AL' FA language, the input language in which the problems to be solved are programmed. This language is an extension of the ALGOL-60 language. 2) AL' FA translator, the translating program by means of which the program written in AL' FA language is translated into the computer program. It consists of 24 blocks with a total storage capacity of 45,000 words. The performance of particular blocks and translation procedure are described in detail, and 3) the AL' FA debugging program, which makes it possible to correct the AL' FA program without studying the computer program. The storage capacity of the AL' FA debugging program is approximately 2000 words.

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ACCESSION NR: AP5009396

It is indicated that scientists were working on the development of the AL' FA System from 1959 to 1964 and that the estimated labor used amounts to 35 man-years. The AL' FA System has been in an experimental stage of operation since January 1964. Some operational data obtained in the first five months are presented and compared with the data on manual programming. Orig. art. has 2 tables.

ASSOCIATION: none

SUBMITTED: 05Oct64   ENCL: 00   SUB CODE: DP

NO REF SOV: Y008   OTHER: 002   ATD PRESS: 3244-P

Card 2/3

ZMIYEVSKIY, P.K.

Gas-turbine fuel for locomotives produced from the gas oils of
retarded coking. Neftepere. i neftekhim. no.10:19-21 '65.
(MIRA 18:6)

1. Volgogradskiy nauchno-issledovatel'skiy institut nefti i gaza.

ZMIYEVSKIY, P.K.; MITROFANOV, M.G.

Catalytic cracking of heavy coker gas oils. Neftepar. i neftekhim.
no.6:3-5 '65.
(MIRA 18:7)

1. Volgogradskiy nauchno-issledovatel'skiy institut nefti gaza.

ZMIYEVSKIY, P.K.; KLYUKANOVA, T.N.; KUSAKINA, G.M.

    Investigating thermal-cracking and retarded coking gasolines
    as raw stock for oxo-synthesis. Neft. i gaz. prom. no.4:
    48-49 O-D '64   (MIRA 18:2)

ZAVIDOV, V.I.; ZMIYEVSKIY, P.K.; FEDOROVA, Z.V.; KHUR.L.I.; ATAMANKIN, A.I.
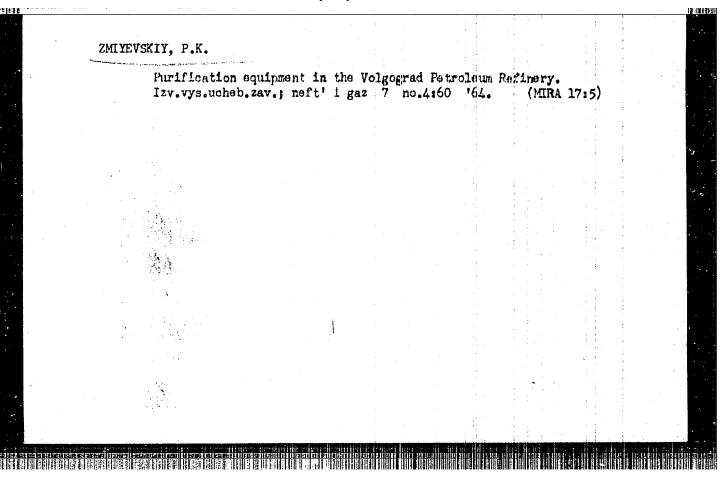
Obtaining extracts to be used as raw materials in the production of carbon black. Nefteper. i neftekhim. no.6:24-26'63
(MIRA 17:7)

1. Volgogradskiy nauchno-issledovatel'skiy institut neftyanoy
i gazovoy promyshlennosti i Volgogradskiy netrepererabatyva-
yushchiy zavod.

ZMIYEVSKIY, P.K.; DAL', V.I.; KUSAKINA, G.M.

Investigating the coking distillates from the refining residues
of Volgograd oils. Izv. vys. ucheb. zav.; neft' i gaz 7 no.3:
59-62 '64.   (MIRA 17:6)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.

ZMIYEVSKIY, P.K.

Purification equipment in the Volgograd Petroleum Refinery.
Izv.vys.ucheb.zav.; neft' i gaz 7 no.4:60 '64.   (MIRA 17:5)

ZMIYEVSKIY, P.K.; DAL', V.I.

Coking gas oils as a crude for catalytic cracking. Nefteper. i
neftekhim. no. 4:6-10 '64.   (MIRA 17:5)

1. Volgogradskiy neftepererabatyvayushchiy zavod.

DAL', V.I.; ZMIYEVSKIY, P.K.; KOVALEV, I.P.

Heavy refining residues of Volgograd petroleums as raw materials
for the retarded coking process. Izv. vys. ucheb. zav.; neft' i
gaz 6 no.10:55-58 '63.

(MIRA 17:3)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut im. Dzer-
zhinskogo.

ZMIYEVSKIY, P.K.; KUSAKINA, G.M.

Using a redesigned atmospheric-vacuum pipe still in the Volgograd
Petroleum Refinery. Neftianik 8 no.1:31-32 Ja '63.   (MIRA 16:3)
(Volgograd—Distillation, Fractional)

ZMIYEVSKIY, P.K.

Problems of the atmospheric vacuum distillation of petroleum.
Nefteper. i neftekhim. no.8:4-7 '63.   (MIRA 17:8)

1. Volgogradskiy nauchno-issledovatel'skiy institut neftyanoy i
gazovoy promyshlennosti.

ZMIYEVSKIY, P.K.; MARTYNENKO, V.V.

Operation of a unit for retarded coking. Nefteper. i neftekhim.
no.5:12-13 '64.
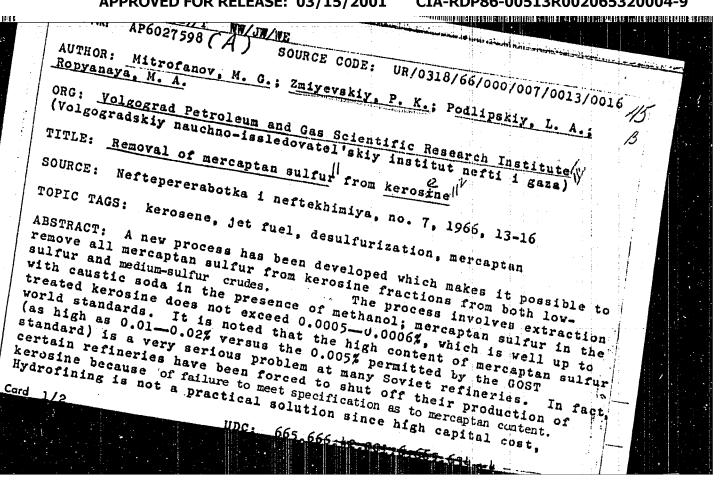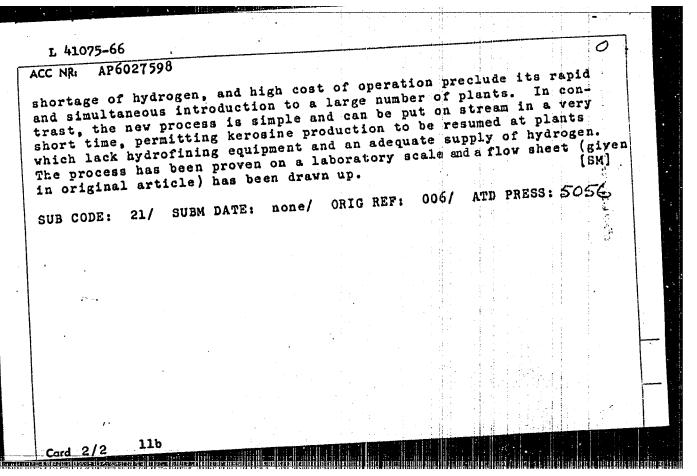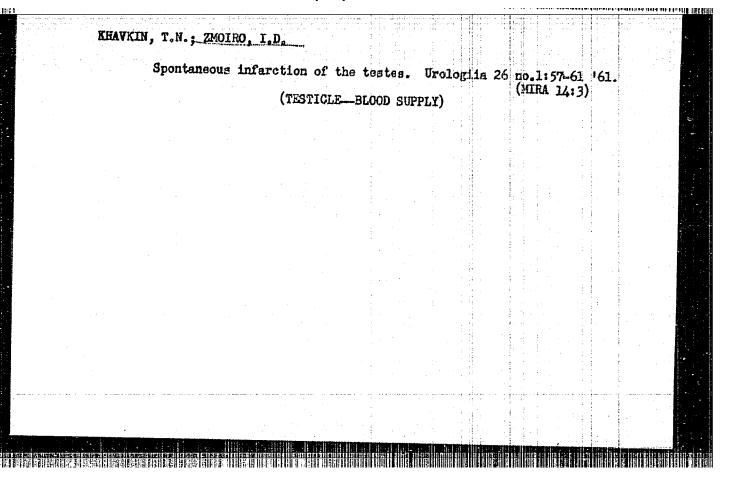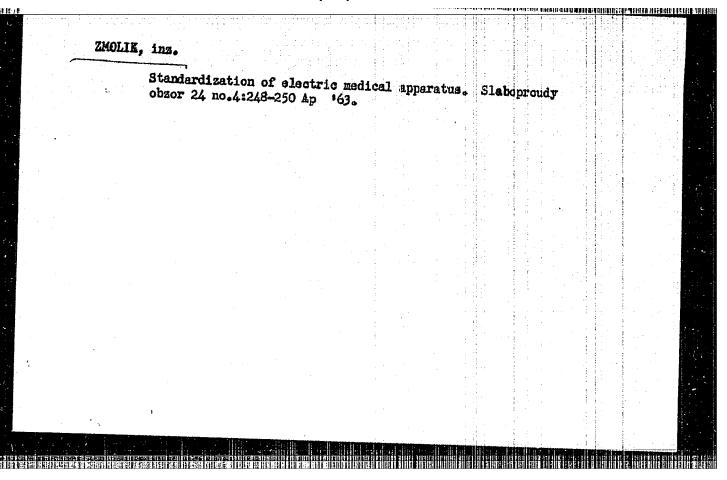   (MIRA 17:8)

1. Volgogradskiy nefteperererabatyvayushchiy zavod i Volgogradskiy
nauchno-issledovatel'skiy institut nefti i gaza.

AP6027598 (A)   SOURCE CODE: UR/0318/66/000/007/0013/0016

AUTHOR: Mitrofanov, M. G.; Zmiyevskiy, P. K.; Podlipskiy, L. A.;
Ropyanaya, M. A.

ORG: Volgograd Petroleum and Gas Scientific Research Institute
(Volgogradskiy nauchno-issledovatel'skiy institut nefti i gaza)

TITLE: Removal of mercaptan sulfur from kerosine

SOURCE: Neftepererabotka i neftekhimiya, no. 7, 1966, 13-16

TOPIC TAGS: kerosene, jet fuel, desulfurization, mercaptan

ABSTRACT: A new process has been developed which makes it possible to
remove all mercaptan sulfur from kerosine fractions from both low-
sulfur and medium-sulfur crudes.   The process involves extraction
with caustic soda in the presence of methanol; mercaptan sulfur in the
treated kerosine does not exceed 0.0005—0.0006%, which is well up to
world standards. It is noted that the high content of mercaptan sulfur
(as high as 0.01—0.02% versus the 0.005% permitted by the GOST
standard) is a very serious problem at many Soviet refineries. In fact,
certain refineries have been forced to shut off their production of
kerosine because of failure to meet specification as to mercaptan content.
Hydrofining is not a practical solution since high capital cost,

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UDC: 665.666

L 41075-66

ACC NR: AP6027598

shortage of hydrogen, and high cost of operation preclude its rapid
and simultaneous introduction to a large number of plants. In con-
trast, the new process is simple and can be put on stream in a very
short time, permitting kerosine production to be resumed at plants
which lack hydrofining equipment and an adequate supply of hydrogen.
The process has been proven on a laboratory scale and a flow sheet (given
in original article) has been drawn up.   [SM]

SUB CODE: 21/ SUBM DATE: none/ ORIG REF: 006/ ATD PRESS: 5056

Card 2/2   11b

KHAVKIN, T.N.; ZMOIRO, I.D.

Spontaneous infarction of the testes. Urologiia 26 no.1:57-61 '61.

(MIRA 14:3)

(TESTICLE—BLOOD SUPPLY)

ZMOLIK, inz.

Standardization of electric medical apparatus. Slaboproudy
obzor 24 no.4:248-250 Ap '63.

ZMOLIK, A., inz.

The standard of magnetophone quality. Slaboproudy obzor
25 no.4:241-243 Ap '64.

ZMOLIK, Antonin, inz.

Regulations for wire broadcasting. Slaboproudy obzor 25 no.6:
370-371 Je '64.

ZMOLIK, A., inz.

General Assembly of International Electrical Commission in Interlaken.
Slaboproudy obzor 22 no.12:771-773 D '61.

(International Electrical Commission)

ZMOLIK, A., inz.

Meeting of the International Electrotechnical Commission, Subcommission on Safety of radio recievers. Slaboproudy obzor 23 no.1:60 Ja '62.

ZMOLIK, Antonin, inz.

International organizations cooperating with the International
Electrotechnical Commission. Normalizace 12 no. 4: 98-99
Ap '64.

1. Office of Standardization and Measurement, Prague.

ZMOLIK, A., inz.

Protection of telecommunication and safeguard equipment against
overvoltage and excess current. Slaboproudy obzor 25 no.3:172-
173 Mr '64.

ZMORA, W.

"New principles of granting credit to cooperative societies."

p. 8 (Rolnik Spoldzielca) Vol. 10, no. 5, Feb. 1958
Warsaw, Poland

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4,
April 1958

ZMOLIK, A., inz.

Magnetic sound recording. Slaboproudy obzor 24 no.6:374-375
Je '63.

ZMOLIK, Antonin, inz.

List of publications of the International Electrotechnical Commission up to the end of 1962. Normalizace 11 no.5: 153-155 My '63.

ZMOLIK, A.

ZMOLIK, A. Standardization of telecommunication apparatus. p. 35.

Vol. 6, no. 2, Feb. 1957
NORMALISACE
TECHNOLOGY
Czechoslovakia

So: East European Accession, Vol. 6, No. 5, May 1957

ZHOLIK, Antonin, inz.

Publications of the International Electrotechnical Commission
in 1963. Normalizace 12 no.7:196-197 Jl'64

1. Office of Standardization and Measurement, Prague.

ZMOLIK, Antonin, inz.

Climatotechnology nomenclature. Normalizace 12 no.8:235 Ag '64.

1. Office of Standardization and Measurement, Prague.

ZMOLIK, A., inz.

Electrotechnical regulations for antennas. Slaboproudy obzor
24 no.11:680-681 N'63.

AUTHORS: Jan Musil and A. Žmolík (Engineers)   Z/039/60/021/01/025/040
                                                    E073/E135
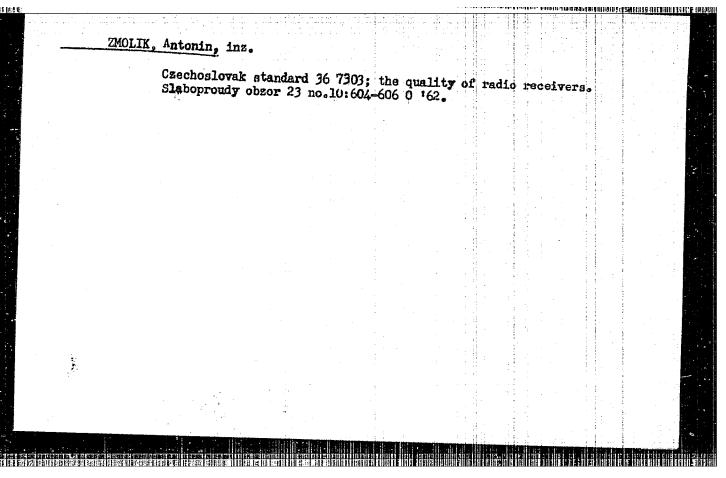TITLE: General IEC Meeting in Madrid

PERIODICAL: Slaboproudý Obzor, 1960, Vol 21, Nr 1, pp 57-59

ABSTRACT: Report on this meeting, which was held between June 30
            and July 10, 1959.   The work of the following sub-
            commissions is reported on:

            Sub-commission 18-3, Interference in ships' radio
                                 communications.

            Sub-commission 39-1, Electron tubes.

            Sub-commission 39-2, Semiconductor elements.

Card 1/1

ZMOLIK, Antonin, inz.

Czechoslovak standard 36 7303; the quality of radio receivers.
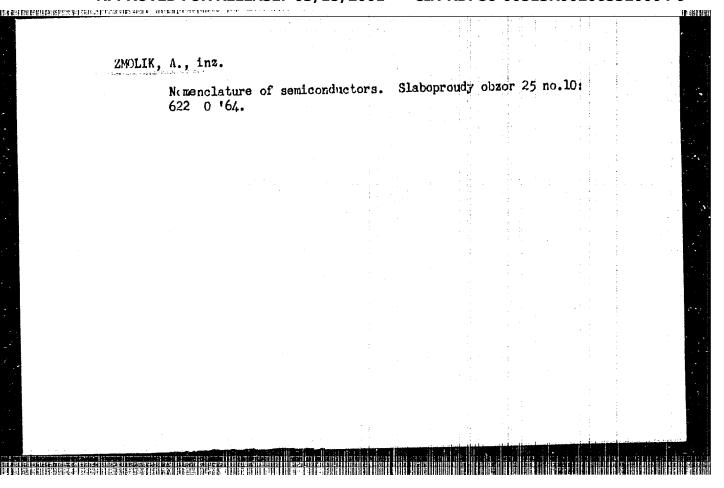Slaboproudy obzor 23 no.10:604-606 O '62.

ZMOLIK, A.

"New international recommendation of the International Electrotechnical
Commission." P. 335.

SLABOPROUDY OBZOR. (Ministerstvo presneho strojirenstvi, Ministerstvo
spoju a Vedecka technicka spolecnost pro elektrotechniku pri CSAV).
Praha, Czechoslovakia, Vol. 20, No. 5, May 1959.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 8,
August 1959.
Uncla.

ZMOLIK, A., inz.

Nomenclature of semiconductors. Slaboproudy obzor 25 no.10:
622 0 '64.

ZMORAY, I.

MILITARY & NAVAL SCIENCES: GENERAL

Periodical NASA VEDA. Vol. 5, no. 10, Oct. 1958.

ZMORAY, I. A national scientific seminar on the fascioliasis of domestic animals. p. 459.
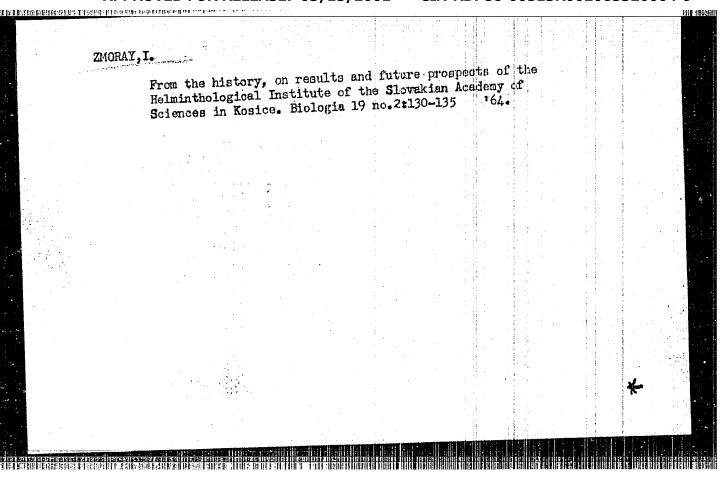
Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 3, March, 1959. Uncl.

ZMORAY, I.

"Application of Michurin's theses in Helminthology."

VESTNIK. Praha, Czechoslovakia, Vol. 5, No. 7/8, 1958.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 9, September 1959.

Unclassified.

ZMORAY, I.

From the history, on results and future·prospects of the
Helminthological Institute of the Slovakian Academy of
Sciences in Kosice. Biologia 19 no.2:130-135   '64.

ZHORAY, I.

The Darwin theory of the "fight for life" in the light of Lysenko's doctrine.
p. 113.

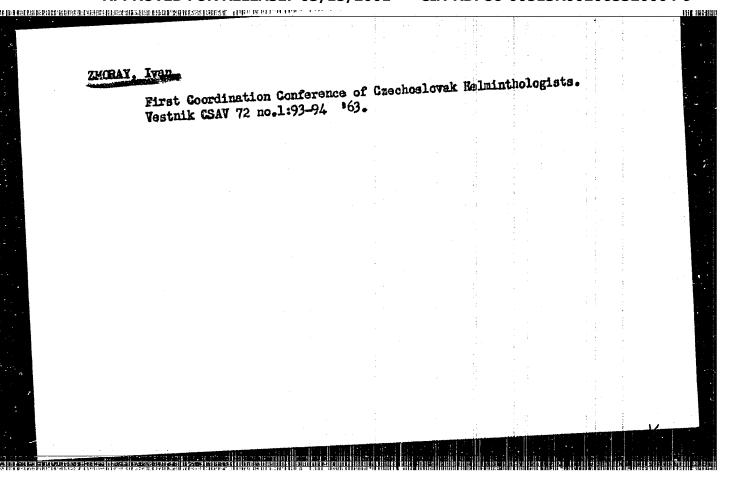SO: East European Accessions List, Vol. 3, No. 9, Sept. 1954, Lib. of Congress.

ZMORAY, I.

"The Darwin Theory of the "Fight for Life" in the Light of Lysenko's Doctrine." p. 113, Bratislava, Vol. 6, 1951.

SO: East European Accessions List, Vol. 3, No. 9, September 1954, Lib. of Congress

ZMORAY, Ivan

First Coordination Conference of Czechoslovak Helminthologists.

Vestnik CSAV 72 no.1:93-94 '63.

PARASITOLOGY

CZECHOSLOVAKIA

ZMORAY, Ivan: Helminthological Institute of the Slovak Academy of Sciences, Kosice. /Original version not given_7.

"On the Problems of the Ecological Understanding of Parasite Specificity."

Bratislava, Biologia, Vol 21, No 4, 1966, pp 241 - 245

Abstract /Author's English summary modified_7: The generally accepted definitions of parasite specificity are discussed. A basic concept of specificity is presented by the author and mathematical equations expressing this concept are presented. The only specific relationship is that between the host and the parasite. The number of specificities should be reduced so that ecological designation could be narrowed down more precisely. No references. Original article is in German. (Manuscript received 6 Dec 65).

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CZECHOSLOVAKIA

ZMORAY, Ivan: LESTAN, Pavol; Helminthological Institute, Slovak Academy of Sciences (Helmintologicky Ustav Slovenskej Akademie Vied), Kosice.

"Catalase Activity in Sexually Adult Females of Ascaris Suum."

Bratislava, Biologia, Vol 21, No 10, 1966, pp 749 - 754

Abstract: The catalase activity of the females of Ascaris suum varies to a great extent. The variation is probably due to the age of the helminth. When the material was homogeneous, as far as age is concerned, the activity was a function of body weight. 3 Tables, 2 Western, 1 Czech, 3 Russian references. (Manuscript received 27 Jun 66).

1/1

ZHOROVICH, V.A.

Generalization of the second Abelian theorem in the theory of power series. Nauk.zap.Kiev.un.9 no.9:129-133 '50.   (MIRA 9:10)

(Series)

Z MOROVICH, V. A.

Mathematical Reviews
Vol. 15 No. 3
March 1954
Analysis

7-9-71

Zmorovič, V. A. On the structure formulas of some class of univalent functions. Doklady Akad. Nauk SSSR (N.S.) 72, 833–836 (1950). (Russian)

The author announces a number of theorems on the class of functions $F(z) = z + \cdots$ regular in $|z| < 1$ for which (1) $\Re e^{-i\alpha} F'(z) > 0$ or (2) $\Re e^{-i\alpha} z F'(z)/F(z) > 0$. A generalization to the case $|F(z)| \leq M$ is indicated.

A. W. Goodman (Lexington, Ky.).

ZMOROVICH, Y.A.

Certain variational problems in the theory of one-sheeted functions. Ukr.mat.
zhur. 4 no.3:276-298 '52.   (MIRA 6:10)

(Functional analysis)

ZMOROVICH, V. A.

Zmorovič, V. A. On a criterion of N. I. Lobačevskiĭ for the convergence of positive numerical series and a generalization of this criterion. Uspehi Matem. Nauk (N.S.) 7, no. 1(47), 162–170 (1952). (Russian)

The author gives an elementary discussion and simple modifications of the following theorem published by Lobačevskiĭ [Učenye Zapiski Imp. Kazan. Univ. 1834, Kn. II, 167–226]. Let $\sum_{n=1}^{\infty} u_n$ be a series of positive terms for which $u_{n+1} < u_n$ and $u_n \to 0$. Let k be a positive integer. Then $\sum u_n$ converges if and only if $\sum p_n 2^{-n}$ converges when the integers p_n are determined by the conditions $U_{p_n+1} < 2^{-n} u_1 \leqq U_{p_n}$, $n = 1, 2, 3, \cdots$.   R. P. Agnew (Ithaca, N. Y.).

SO: MATHEMATICAL REVIEW (unclassified)
Vol XIV, No 3, pp233-240 March 1953

ZHOROVICH, V.A.

Certain problems in the theory of univalent functions. Nauk.zap.Kiev.un.
(MLRA 9:10)
11 no.7:83-94   '52.
(Functions, Analytic)

Z MOROVICH, V. A.

7-9-54
LL

Zmorovič, V. A. On structure formulas of certain classes of analytic functions univalent in a circular ring. Dokl. lady Akad. Nauk SSSR (N.S.) 86, 465–468 (1952). (Russian)

Single-valued analytic functions $f(z)$, are considered in the annulus $q < |z| < 1$. Such a function is called normed if $\oint f\,dz/z = 2\pi i$, the integral being extended over $|z| = \rho$, $q < \rho < 1$. Theorem 1 gives a Stieltjes integral representation of normed functions with positive real parts. The formula, generalizing the classical Herglotz representation, reads

$$f(z) = \frac{1}{2\pi}\int_{-\pi}^{\pi} F(ze^{-i\theta})\,d\mu_1(\theta) + \frac{1}{2\pi}\int_{-\pi}^{\pi} F\left(\frac{q}{z}e^{-i\theta}\right)d\mu_2(\theta) - 1.$$

Here μ_1, μ_2 are non-decreasing real-valued functions and

$$F(z) = \frac{i}{\pi}\vartheta_1'\left(\frac{\log z}{2\pi i}; q\right) = \frac{1+z}{1-z} + 2\sum_{1}^{\infty}\frac{q^{2k}}{1-q^{2k}}(z^k - z^{-k}).$$

Using Theorem 1 the author finds integral representations for functions $f(z)$ satisfying the following conditions: $f(z)$ is univalent and maps circles $|z| = \rho$ onto star-shaped curves (Th. 2), $\operatorname{Re} e^{i\alpha}f'(z)z/f(z) > 0$ for some real α (Th. 3), $f(z)$ maps circles $|z| = \rho$ into convex curves (Th. 4), $f(z)$ has a simple pole in the annulus and maps the annulus in a one-to-one way onto the complement of two convex bodies (Th. 6). [For similar results in the case of a disc, cf. the paper reviewed above.]   L. Bers (New York, N. Y.).

Z MOROVICH, V. A.

Mathematical Reviews
Vol. 14 No. 11
Dec. 1953
Analysis

Zmorovič, V. A. On some classes of analytic functions univalent in a circular ring. Mat. Sbornik N.S. 32(74), 633-652 (1953). (Russian)

Let $f(z)$ be regular in a ring $K: 0 < q < |z| < 1$, and normalized by the condition that $\int f(z) z^{-1} dz = 2\pi i$ on $q < r = |z| < 1$. It is proved that a necessary and sufficient condition that $\Re(f(z)) > 0$ in K is that

$$f(z) = \frac{1}{2\pi} \int_{-\pi}^{\pi} F(z e^{-i\theta}) d\mu_1(\theta) + \frac{1}{2\pi} \int_{-\pi}^{\pi} F\left(\frac{q}{z} e^{i\theta}\right) d\mu_2(\theta) - 1,$$

where

$$F(z) = \frac{1+z}{1-z} + 2 \sum_{k=1}^{\infty} \frac{q^{2k}}{1-q^{2k}} (z^k - z^{-k}),$$

and $\mu_j(\theta)$, $j = 1, 2$, is a nondecreasing function on $[\pi, -\pi]$ for which $\mu_j(-\pi+0) = \mu_j(-\pi) = 0$ and $\mu_j(\pi) = 2\pi$.

This theorem contains a variety of previously known results as special cases. Application is made to obtain formulas for functions which are regular and univalent in K and (a) convex, (b) starlike, and also for functions meromorphic and univalent in K.   A. W. Goodman.

ZMORVICH, V.A.

Rounded relativistic problem of two bodies. Ukr.mat.zhur. 6 no.1:105-113
(Problem of two bodies)   (MIRA 9:1)
'54.

ZKOROVICH, V.A.

Certain special classes of analytical functions one-sheeted in
the circle. Usp.mat.nauk 9 no.4:175-182 '54.   (MLRA 8:1)
          (Functions, Analytic)

ZMOROVICH, V. A.

CARD 1/3   PG - 500

SUBJECT   USSR/MATHEMATICS/Theory of functions
AUTHOR   ZMOROVIČ V.A.
TITLE   On the limits of the roots of algebraic polynomials.
PERIODICAL   Uspechi mat.Nauk 11, 5, 179-183 (1956)
             reviewed 1/1957

Let be given the algebraic polynomial

(1) $$P(z) = \sum_{\nu=0}^{n} a_\nu z^\nu \qquad (a_0 \neq 0, \quad a_n \neq 0)$$

with real or complex coefficients. Then the following theorems are valid:

1. For $n \geqslant 2$ be $\quad R = \max\left\{\left|\frac{a_k}{a_n}\right|^{\frac{1}{n-k}}\right\}_{k=0}^{k=n-1}$ and $R_0 = \max\left\{\left|\frac{a_k}{a_0}\right|^{\frac{1}{k}}\right\}_{k=1}^{k=n}$.

Then all zeros of (1) lie in the ring

(2) $$\frac{x}{R_0} \leqslant |z| \leqslant \frac{R}{x}$$

where x is the single positive root of $x^{n+1} - 2x + 1 = 0$ being different from 1.
This root satisfies the inequation

Card 2/3   PG - 500

$$\frac{1}{2} + \frac{1}{2^{n+2}} < x < \frac{1}{2} + \frac{1}{2^{n+1}} \; .$$

The limits of (2) are exact: The lower one reaches the polynomial $\sum\limits_{k=0}^{n-1} (R_0 z)^{n-k} - 1$

and the upper one reaches the polynomial $z^n - \sum\limits_{k=1}^{n} R^k z^{n-k}$.

2. If $R \geqslant \max \left\{ \left| \dfrac{a_{n-k}}{a_n} \right|^{\frac{1}{k}} \right\}_{k=1}^{k=n}$, then

$$n\left(\frac{R}{k}\right) \leqslant \frac{\ln\left[(n+1)\left|\dfrac{a_n}{a_0}\right| R^n\right]}{\ln k} \; ,$$

where $k > 1$ and $n\left(\dfrac{R}{k}\right)$ is the number of zeros of (1) in the circle $|z| \leqslant \dfrac{R}{k}$.

3. Let $\left|\dfrac{a_k}{a_0}\right| = \sigma_k$ $(k=1,2,\ldots n)$. Outside of the circle

$$|z| \leqslant (1 + \sigma_1 + \ldots + \sigma_n)^{-\frac{1}{n-k}} \qquad (k=1,2,\ldots n-1)$$
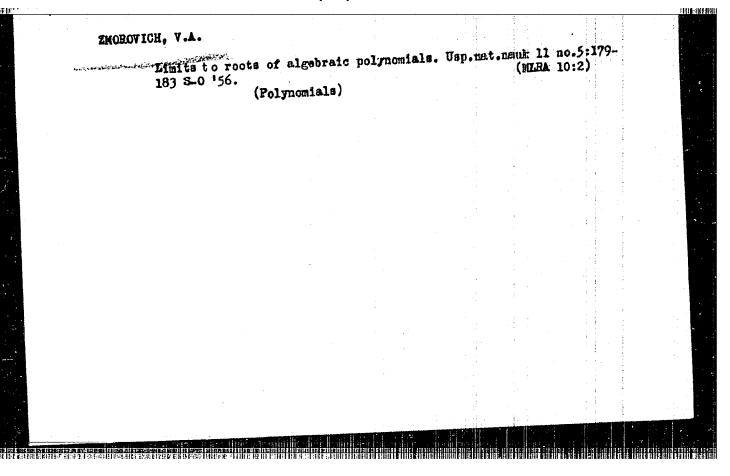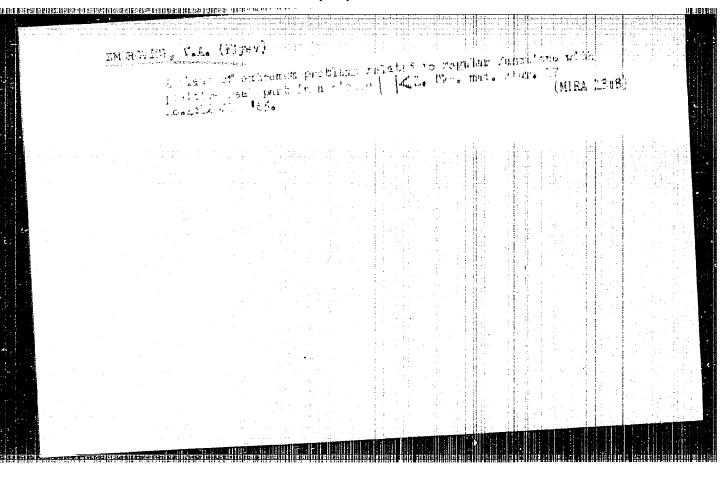
there lie at least k zeros of (1).

4. Let $Q(z) = 1 + b_1 z + b_2 z^2 + \ldots + b_n z^n$ and $1 + |b_1| + \ldots + |b_n| = A$. Let $S(A;n)$ denote the class of polynomials $Q(z)$ for fixed n and A. Let $r_k(A,n)$ be the exact upper bound of those numbers $r_k > 0$ for which in the circle $|z| \leqslant r_k$ there lie not more than $n-k$ zeros of each polynomial of the class $S(A,n)$. For a polynomial of the class $S(A,n)$ holds:
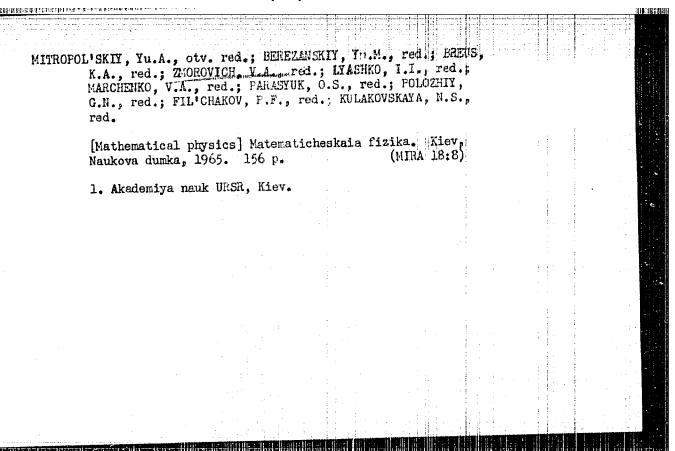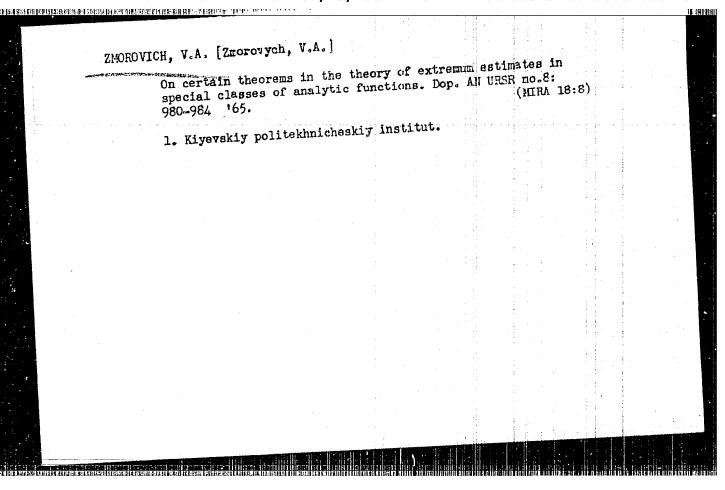
$$r_1(A,n) = (A-1)^{-\frac{1}{n}}.$$

With a corresponding restriction, from these theorems one obtains the results of S.K.Singh (Proc.Nat.Inst.Sci.India <u>19,</u> 5, 601-603 (1953)).
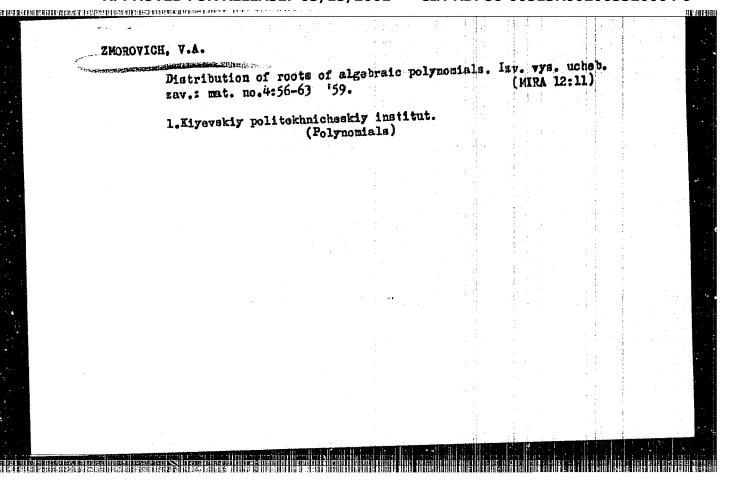
ZKOROVICH, V.A. (Kiyev).

Certain classes of analytical functions in a circular ring. Mat.
sbor. 40 no.2:225-238 O '56.
          (Functions, Analytic)

(MLRA 9:12)

ZHOROVICH, V.A.

Limits to roots of algebraic polynomials. Usp.mat.nauk 11 no.5:179-183 S-O '56. (MLRA 10:2)

(Polynomials)

EMROMSKY, V.A. (Kiyev)

A class of extremum problems relate to regular conditions with
[...] set port in n [...] [...] Nr. mat. zhur. 17
[...] '65.

(MIRA 18:8)

MITROPOL'SKIY, Yu.A., otv. red.; BEREZANSKIY, Yu.M., red.; BREUS,
    K.A., red.; ZMOROVICH, V.A., red.; LYASHKO, I.I., red.;
    MARCHENKO, V.A., red.; PARASYUK, O.S., red.; POLOZHIY,
    G.N., red.; FIL'CHAKOV, F.F., red.; KULAKOVSKAYA, N.S.,
    red.

[Mathematical physics] Matematicheskaia fizika. Kiev,
Naukova dumka, 1965. 156 p.   (MIRA 18:8)

1. Akademiya nauk UkSR, Kiev.

ZMOROVICH, V.A. [Zmorovych, V.A.]

On certain theorems in the theory of extremum estimates in special classes of analytic functions. Dop. AN URSR no.8: 980-984 '65.   (MIRA 18:8)

1. Kiyevskiy politekhnicheskiy institut.

ZHOROVICH, V.A.

One of Mathieu's inequalities. Izv.vys.ucheb.zav.; mat. no.1:
123-124 '60.   (MIRA 13:6)

1. Kiyevskiy politekhnicheskiy institut.
              (Inequalities)

ZMOROVICH, V.A.

Distribution of roots of algebraic polynomials. Izv. vys. ucheb.
zav.: mat. no.4:56-63 '59.   (MIRA 12:11)

1.Kiyevskiy politekhnicheskiy institut.
                    (Polynomials)

SOV/140-59-4-8/26

16(1)
AUTHOR: Zmorovich, V.A.

TITLE: On the Theory of the Distribution of Zeros of Algebraic
            Polynomials

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1959,
            Nr 4, pp 56 - 63 (USSR)

ABSTRACT: Let

$$(1.1) \quad P_n(z) = \sum_{\nu=0}^{n} a_\nu z^\nu \quad , \ n \geqslant 2, \ a_0 \neq 0, \ a_n \neq 0, \quad a_\nu \text{ complex.}$$

Let denote :

$$\alpha_\nu = \left| \frac{a_\nu}{a_n} \right| \ (\nu = 0,1,\ldots,n-1) \quad , \quad \sigma_\nu = \left| \frac{a_\nu}{a_0} \right| (\nu = 1,2,\ldots,n)$$

10 theorems of Singh [Ref 1], Dan Sun-shi [Ref 3] and
Rahman [Ref 2] are once more formulated and compared. The author
generalizes results of Parodi [Ref 5,6] . Theorem 11 :
In the domain $|z| > r_\lambda = (1 + \sigma_1 + \cdots + \sigma_n)^{-1/\lambda}$ where

Card 1/3

On the Theory of the Distribution of Zeros of   SOV/140-59-4-8/25
Algebraic Polynomials

$\lambda = \frac{n-1}{s}$, $s > 1$ and integer, (1.1) possesses at least

$$n - \left[\frac{n-1}{s} \right] = \left[\frac{s-1}{s} n + 1 \right]$$

zeros.

Theorem 13 : If (1.1) satisfies the condition

$$\alpha_{n-p} > 1 + \sum_{k=1}^{n-1} \alpha_k \qquad (k \neq n - p , \qquad p = 2,3,\dots,n)$$

then p zeros of (1.1) lie in the ring

$$1 < |z| < \frac{1}{2} \left(\sigma + \sqrt{\sigma^2 + 4\alpha} \right) ,$$

where $\alpha = \left| \frac{a_{n-p}}{a_n} \right|$ and $\sigma = \sum_{k=0}^{n-1} \alpha_k$ $(k \neq n - p)$

Card 2/3

On the Theory of the Distribution of Zeros of
Algebraic Polynomials   SOV/140-59-4-8/26

Theorem 14 : If $a_{n-k} = 0$ $(k=1,2,\ldots,p-1)$ and $\alpha_{n-p} \geqslant 1 +$

$+ \sum_{k=0}^{n-p-1} \alpha_k$, then each of the p zeros of (1.1) in $|z| \geqslant 1$

lie in one of the p domains:

$$\left| z\left(z^p + \frac{a_{n-p}}{a_n}\right) \right| \leqslant \sigma = \sum_{k=0}^{n-p-1} \alpha_k$$

There are 6 references, 1 of which is Soviet, 1 Chinese,
2 Indian, and 2 French.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut (Kiyev Polytechnic
             Institute)
SUBMITTED: May 12, 1958

Card 3/3

67085

16(1)-16.3000   SOV/44-59-1-310

Translation from : Referativnyy zhurnal,Matematika,1959,Nr 1,p 58 (USSR)

AUTHOR: Zmorovich, V.A.

TITLE: On Generalized Analytic Functions

PERIODICAL: Izv.Kiyevsk.politekhn.in-ta,1956,19, 3 - 65

ABSTRACT: The author represents the foundations of an algorithmic theory
    of the functions $f(z) = u + iv$ $(z = x + iy)$ which are defined by the
    elliptic system of equations

$$u_x = a(x,y)v_x + b(x,y)v_y \ ,$$

$$u_y = c(x,y)v_x + d(x,y)v_y \ .$$

Differentiation and integration are constructed in the class of these
functions (for more details see Referativnyy zhurnal.Matematika,1957,
1367).
                                          G.N. Polozhiy

Card 1/1

16(1)

AUTHOR: Zmorovich, V.A.   SOV/42-14-4-13/27

TITLE: On the Theory of Special Classes of Schlicht Functions.II

PERIODICAL: Uspekhi matematicheskikh nauk, 1959,Vol 14,Nr 4,pp 169-172 (USSR)

ABSTRACT: The present paper is a direct continuation of [Ref 1]. The
             author introduces two classes of functions schlicht and regular
             in the unit circle $|z|<1$ containing as very special subclasses
             the classes treated by Tchakaloff [Ref 2] and Thale [Ref 3].
             It is stated that all these classes belong to the "almost convex"
             functions of Ozaki [Ref 4]. Finally it is proved:
             Theorem: If $f(z)$ is regular and convex in $|z|<1$; λ, μ, C are

             complex numbers, $\mu \neq 0$, $\left|\arg \frac{\lambda}{\mu}\right| < \frac{\pi}{2}$, then $F(z)= \lambda f(z)+\mu z f'(z)+C$

             is "almost convex" in $|z|<1$.
             The author mentions L.Ye.Dunduchenko, and B.N.Rakhmanov.
             There are 6 references, 2 of which are Soviet, 1 American, 1 French,
             1 Roumanian, and 1 Japanese.

Card 1/1

16(1)

AUTHOR: Zmorovich, V.A.   SOV/42-14-3-8/22

TITLE: On the Theory of Special Classes of Schlicht Functions I

PERIODICAL: Uspekhi matematicheskikh nauk,1959,Vol 14,Nr 3,
                                          pp 137 - 144 (USSR)
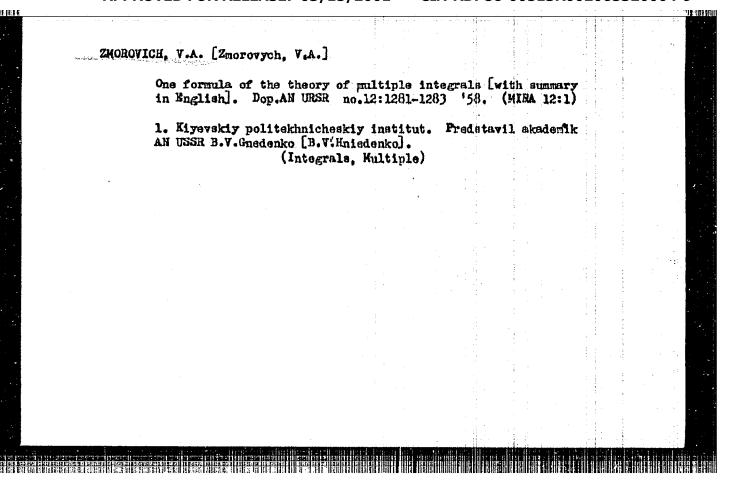
ABSTRACT: The author considers certain special classes of schlicht
              functions, to which there belong in particular the functions
              convex in a given direction introduced by Robertson /Ref 1 7
              and some function classes of B.N. Rakhmanov /Ref 2 7. It is
              shown that all these classes are subclasses of the class K
              of the almost convex functions of Ozaki /Ref 3 7. The   o
              author proves a general theorem on schlicht functions in
              schlicht domains with an arbitrary connectivity. The theorem
              on almost convex functions of Ozaki and a theorem of Rogozhin
              /Ref 4 7 are obtained as conclusions. Altogether there are
              three theorems and several conclusions. - There are 5 re-
              ferences, 3 of which are Soviet, 1 American, and 1 Japanese.

SUBMITTED: November 19,1956

Card 1/1

ZMOROVICH, V.A. [Zmorovych, V.A.]

One formula of the theory of multiple integrals [with summary in English]. Dop.AN URSR no.12:1281-1283 '58. (MIRA 12:1)

1. Kiyevskiy politekhnicheskiy institut. Predstavil akademik AN USSR B.V.Gnedenko [B.V.Hniedenko].
(Integrals, Multiple)

ZMOROVICH, V.A. [Zmorovych, V.A.]

On the theory of special classes of univalent functions. Dop. AN URSR
no.1:5-9 '59.   (MIRA 12:3)

1. Kiyevskiy politekhnicheskiy institut. Predstavil akademik AN USSR
B.V. Gnedenko [B.V. Hniedenko].
                    (Functional analysis)

AUTHOR: Zmorovich, V.A.   SOV/140-58-2-10/20

TITLE: On Some Marks of Convergence and Divergence for Series of
           Positive Numbers (O nekotorykh priznakakh skhodimosti i pas-
           khodimosti znakopolozhitel'nykh chislovykh ryadov)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy Ministerstva vysshego
           obrazovaniya SSSR, Matematika, 1958, Nr 2, pp 106-117 (USSR)

ABSTRACT: Let $\{p_k\}$ be a sequence of positive numbers, $p_1 \geqslant 1$, $p_k < p_{k+1}$,

           $\lim\limits_{k \to \infty} p_k = \infty$. Let the function $f(x)$ be positive, continuous and
           monotonely decreasing on $[1,\infty]$, $\lim\limits_{x \to \infty} f(x) = 0$.

           Theorem: In order that the series

           (1) $\sum\limits_{1}^{\infty} f(k)$ and   (2) $\sum\limits_{1}^{\infty}(p_{k+1} - p_k)f(p_k)$

           converge or diverge at the same time it is necessary and sufficient
           that
           (3) $\overline{\lim\limits_{k \to \infty}} \ \dfrac{p_{k+1}}{p_k} < \infty$.

Card 1/2   Theorem: Let $f(x)$ be continuous and not negative for $x \geqslant 1$,

On Some Marks of Convergence and Divergence for Series   SOV/140-58-2-10/20
of Positive Numbers

Var $\left\{f(x)\right\}_{t}^{\infty} \leq \varphi(t)$, $t \geq 1$, where $\varphi(t)$ is a not increasing, not negative function on $[1,\infty]$, where $\sum_{1}^{\infty} \varphi(k)$ converges. Let

the sequence $\left\{p_k\right\}$ be as above and let it satisfy (3). Then (1) and (2) converge or diverge at the same time.
Three further theorems with conclusions give improvements of older results of Bugayev [Ref 2] and the proof of the necessity of certain sufficient convergence conditions conjectured by the author [Ref 6].
There are 8 references, 5 of which are Soviet, 1 French, 1 Indian, and 1 German.

ASSOCIATION: Kiyevskiy ordena Lenina politekhnicheskiy institut (Kiyev Polytechnical Institute distinguished by the Lenin Order)

SUBMITTED: November 15, 1957

Card 2/2

ZMOROVICH, V.A., [Zmorovych, V.A.]

Theory of convergence of positive number series. Dop. AN URSR
no.8:805-809 '58.   (MIRA 11:10)

1.Kiyevskiy politekhnicheskiy institut. Predstavil akademik
AN USSR B.V. Gnedenko [B.V. Hniedenko].
            (Series) (Convergence)

16(1)   SOV/21-59-1-2/26

AUTHOR: Zmorovich, V.A.

TITLE: On the Theory of Special Classes of Unifoliate Functions
               (K teorii spetsial'nykh klassov odnolistnykh funktsiy)

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, Nr 1, 1959,
               pp 5-9 (USSR)

ABSTRACT: This article establishes a few structural formulae of
               some classes of unifoliate holomorphic functions in a
               circle $|z| < 1$ of analytic functions, upon which, some
               of the formulas of L.Tchakaloff [1], Thale [2] and
               others are based. It also establishes a structural for-
               mula for classes L_a^2, L^2 of B.N. Rakhmanov. Four
               theorems are examined and proved true. In the process
               of calculation, the regular function in circle $|z| < 1$,
               which makes possible identification of the convex func-
               tion $\varphi(z)$ in that circle, and real number Y, is desig-
               nated K_0. Convex functions in circle $|z| < 1$ are called

Card 1/2   functions of class S^0. Every stable function on segment

SOV/21-59-1-2/26

On the Theory of Special Classes of Unifoliate Functions.

$[\alpha; \beta]$ is called a function of class M, with a limited variation on that segment, and of class Mh, when it has a variation h. $F(z; \theta)$ stands for continuous function of arguments z and θ when $z \leq p$ and $0 \leq \theta \leq 2\pi$, at $p < 1$ and is arbitrarily close to 1. Other designations are standard mathematical. There are 7 references, 3 of which are Soviet, 3 English and one Japanese.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut (Kiyev Polytechnical Institute).

PRESENTED: July 14, 1958, by B.V. Gnedenko, Member of the AS UkrSSR.

Card 2/2

16(1)   SOV/21-59-4-2/27

AUTHOR: Zmorovich, V.A.

TITLE: On the Boundaries of Curvature Fluctuation of a
               Plane Curve Image in Unifoliate Conformal Mapping

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1959, Nr 4,
               pp 351-354 (USSR)

ABSTRACT: Furthering the works by L. Tchakaloff /Ref 1_7 and
               L.Ye. Dunduchenko /Ref 2_7, the author examines general
               problems of distortion of curvature in a plane curve
               in unifoliate conformal mapping. The principal aim
               of this article is to attract attention of mathe-
               maticians to investigation of a new series of possible
               extreme problems of the theory of unifoliate func-
               tions. General estimations (13) and (15) are estab-
               lished for fluctuations of the curvature on a multi-
Card 1/2   tude of possible directions of the tangent of the

SOV/21-59-4-2/27

On the Boundaries of Curvature Fluctuations of a Plane Curve
Image in Unifoliate Conformal Mapping

        initial curve. Two examples are considered. De-
        signations are standard mathematical. There are
        2 Soviet references.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut (Kiyev Poly-
        technical Institute)

PRESENTED: By B.V. Gnedenko, Member of the AS UkrSSR

SUBMITTED: December 7, 1958

Card 2/2

AUTHOR: Zmorovich, V.A.   21-58-5-5/28

TITLE: On Generalization of Schwarz's Integral Formula on n-Connected
             Circular Domains (Ob obobshchenii integral'noy formuly Shvar-
             tsa na n-svyasnyye krugovyye oblasti)

PERIODICAL: Dopovidi Akademii nauk Ukraine'koi RSR, 1958, Nr 5, pp 489-
             492 (USSR)

ABSTRACT: The author finds another form other than Meschkowski's formu-
             la for the generalization of Schwarz's formula, which is more
             convenient for various applications. It looks as follows:

$$f(z) = \frac{1}{2\pi} \sum_{j=1}^{n} \int_{0}^{2\pi} u_j(\theta) F_j(z; \zeta_j) d\theta - \alpha + i\beta$$

             where α and β are real constants and $\alpha = \lambda_k$ (k = 1,2,..., n).
             This formula is a generalization of the Schwarz integral for-
             mula on n-connected circulr domains, which reduces to the
             former at n = 1. If the boundary of an n-connected domain
             consists of ordinary closed analytical curves, the formula
             of the author can be extended to this case by means of a
             certain auxiliary conformal mapping. Making use of his for-
Card 1/2   mula the author establishes the structural formulas for three

21-58-5-5/28

On Generalization of Schwarz's Integral Formula on n-Connected Circular Domains

               important classes of single-valued regular functions in n-connected circular domains, which was not possible to accomplish with the aid of Meschkowski's formula $\underline{/}$ Ref 1 $\underline{/}$. There are 5 references, 2 of which are Soviet, 1 German and 2 Finnish.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut (Kiyev Polytechnic Institute)

PRESENTED: . By Member of the AS UkrSSR, B.V. Gnedenko

SUBMITTED: October 10, 1957

NOTE: Russian title and Russian names of individuals and institutions appearing in this article have been used in the transliteration.

1. Integral functions--Theory

Card 2/2

ZMOROVICH, V.A. [Zmorovych, V.A.]

Generalization of Schwartz' integral formula on n-connected circular
domains [with summary in English]. Dop. AN URSR no.5:489-492 '58.
(MIRA 11:6)

1.Kiyevskiy politekhnicheskiy institut. Predstavleno akademikom
B.V. Gnedenko [B.V. Hniedenko].
                (Functions)

21-58-7-3/27

AUTHOR: Zmorovich, V.A.

TITLE: On a Generalization of Poisson's Integral Formula for
              n-Connected Circular Domains (Ob obobshchenii integral'noy
              formuly Puassona na n-svyaznyye krugovyye oblasti)

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1958, Nr 7,
              pp 698-701 (USSR)

ABSTRACT: The author considers a unifoliate n-connected domain K_n
              whose boundary consists of n-circumferances of Γ_j -circles
              described by the equations:

              $$\zeta_j = a_j + R_j e^{i\theta} \qquad (j = 1,2,\dots,n; \quad 0 \leqslant \theta \leqslant 2\pi).$$

              He looks for a formula which can define every regular in
              K_n and continuous in $\bar{K}_n$ harmonic function in the points of
              the circumferences of Γ_j in a form more convenient than
              those of Meschkowski (Ref. 1) and Sekki (Ref. 2). The new-
              ly found representation looks as follows:

Card 1/3

21-58-7-3/27

On a Generalization of Poisson's Integral Formula for n-Connected Circular
Domains

$$u(z) = \frac{1}{2\pi} \sum_{k=1}^{n} \int_{0}^{2\pi} u_k(\theta) \operatorname{Re} F_k(z; \zeta_k) \, d\theta - \sum_{k=1}^{n} \frac{\lambda_k}{\ln q_k} \ln |G_k'(z)|,$$

where $F_k (z; \zeta_k)$ (k = 1, 2, ..., n) are unifoliate in K_n func-
tions introduced by the author (Ref. 3), and

$$\lambda = \frac{1}{2\pi} \sum_{j=1}^{n} \int_{0}^{2\pi} u_j(\theta) \, \ell_{j)k}(\theta) \, d\theta$$

This is a generalization of the Poisson integral formula
for n-connected unifoliate circular domains. Employing
this formula, the author proves some general theorems
about the integral representations of various classes of
analytical and harmonic functions in n-connected circular
domains. In particular, a generalized Poisson - Jensen
formula is established for n-connected circular domains.
There are 3 references, 1 of which is Soviet and 2 Finnish.

Card 2/3

On a Generalization of Poisson's Integral Formula for a-Connected Circular
Domains   21-58-7-5/27

ASSOCIATION: Kiyevskiy politekhnicheskiy institut (Kiev Polytechnical
                  Institute)

PRESENTED: By Member of the AS UkrSSR, B.V. Gnedenko

SUBMITTED: February 18, 1958

NOTE: Russian title and Russian names of individuals and
                  institutions appearing in this article have been used
                  in the transliteration.

                  1. Poisson integrals—Applications   2. Harmonic functions
                  —Applications   3. Analytic functions—Applications

Card 3/3

SOV-21-58-8-1/27

AUTHOR: Zmorovich, V.A.

TITLE: On the Theory of Convergence of Positive Numerical Series
(K teorii skhodimosti znakopolozhitel'nykh chislovykh ryadov)

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1958, Nr 8, pp 805-809
(USSR)

ABSTRACT:
The author proves four theorems to be used in testing for con-
vergence or divergence of positive numerical series. He
shows that in certain cases they can be reduced to the theorems
formulated by N.I. Lobachevskiy, V.P. Yermakov, A. Cauchy,
O. Schloemilch and N.V. Bugayev. However, a theorem of the
latter (Ref. 10) was found to be incorrect, and some conclusions
based by Yermakov (Ref. 4) on this theorem are therefore un-
founded. In the author's opinion, the theorems proved are of
interest from the viewpoint of the general theory of convergence
and divergence of numerical series, due to a certain complete-
ness of the results contained in them.
There are 13 references, 10 of which are Soviet, 1 French,
1 German and 1 English.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut (Kiyev Polytechnical
Institute)

Card 1/2

On the Theory of Convergence of Positive Numerical Series   SOV-21-58-6-1/27

PRESENTED: By Member of the AS UkrSSR, B.V. Gnedenko
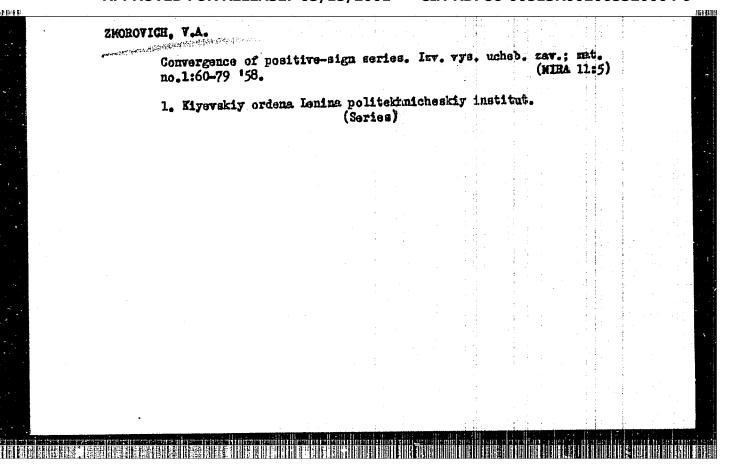
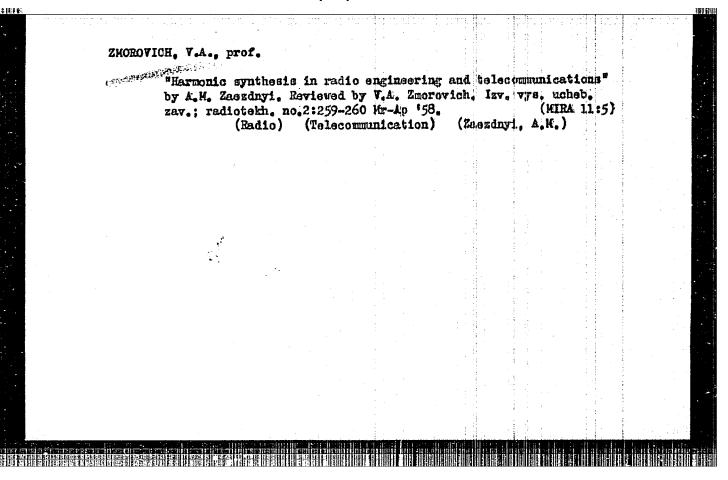SUBMITTED: March 6, 1958

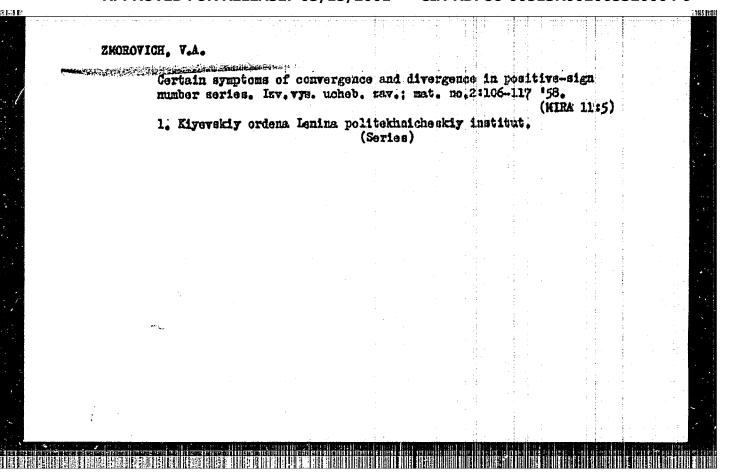NOTE: Russian title and Russian names of individuals and institutions
               appearing in this article have been used in the transliteration.

               1. Mathematics--Theory

Card 2/2

ZHOROVICH, V.A.

Convergence of positive-sign series. Izv. vys. ucheb. zav.; mat.
no.1:60-79 '58.   (MIRA 11:5)

1. Kiyevskiy ordena Lenina politekhnicheskiy institut.
                         (Series)

ZMOROVICH, V.A., prof.

"Harmonic synthesis in radio engineering and telecommunications" by A.M. Zaezdnyi. Reviewed by V.A. Zmorovich. Izv. vys. ucheb. zav.; radiotekh. no.2:259-260 Mr-Ap '58.   (MIRA 11:5)
        (Radio)   (Telecommunication)   (Zaezdnyi, A.K.)

ZHOROVICH, V.A.

Certain symptoms of convergence and divergence in positive-sign
number series. Izv.vys. ucheb. zav.; mat. no.2:106-117 '58.
(MIRA 11:5)

1. Kiyevskiy ordena Lenina politekhnicheskiy institut.
(Series)

Zmorovicky KR.

TETEL'BAUM, S.I.; ZMOROVICH, V.A. [Zmorovych, V.A.]

Possibility of improving the clearness of images produced by
optical instruments [with summary in English]. Dop. AN URSR
no.4:323-327 '57.   (MIRA 11:3)

1.Chlen-korrespondent AN URSR (Tetel'baum). 2. Institut elektro-
tekhniki AN URSR i Kiivs'kiy politekhnichniy institut.
                    (Optical instruments)

Zmorovich, V.A.

21-4-1/24

AUTHORS: Tetel'baum, S.I., Corresponding Member of the Ukrainian Academy of Sciences and Zmorovych, V.A.

TITLE: On the Possibility of Improving the Clearness of Images Produced by Optical Instruments (Pro mozhlyvist' polipshennya chitkosti zobrazhen', utvoryuvanykh optychnymy instrumentamy)

PERIODICAL: Dopovidi Akademii Nauk Ukrains'koi RSR, 1957, #4, pp 323-327 (USSR)

ABSTRACT: The clearness of images is essentially restricted by the diffraction properties of an optical system. It is possible to improve this clearness, if characteristics of the optical devices used are assumed to be known.

The article describes a method of such an improvement proposed by Tetel'baum and gives a proof of the uniqueness of the solution deduced by Zmorovich.

The method consists in the solution of an integral equation in n-dimensional space which looks as follows:

$$\hat{F}(k, \nu, \rho) = \iiint_{(\emptyset)} F(\ell, \sigma, q)\, \varphi(k, \nu, \rho, \ell, \sigma, q)\, d\ell,\, d\sigma,\, dq.$$

Card 1/3

21-4-1/24

TITLE: On the Possibility of Improving the Clearness of Images Pro-
duced by Optical Instruments (Pro mozhlyvist' polipshennya chit-
kosti zobrazhen', utvoryuvanykh optychnymy instrumentamy)

where $\overset{*}{F}$ is the known   function of coordinates k, frequency
and other parameters p. This function corresponds to the less
clear image of an object and it is found from experimental data
(for instance, by the photometry or densitometry of photograph-
ies).

The function F which represent an investigated object more
clearly is being sought for. The kernel of equation φ charac-
terizes diffractional and other properties of the apparatus
used, and of the observational conditions.

This method can be applied also to ultrasonic devices, radio-
technical tools with directed antennas, spectroanalyzers, etc.

It is expected that the method proposed will make it possible
to improve the clearness of images by several times.

On order to find the function F, it is expedient to use an
algorithm to be applied in modern high-speed electronic com-
puters or special integrators.

Card 2/3   No references are given.

21-4-1/44

TITLE: On the Possibility of Improving the Clearness of Images Produced
                by Optical Instruments (Pro mozhlyvist' polipshennya chitkosti
                zobrazhen', utvoryuvanykh optychnymy instrumentamy)

INSTITUTION: Institute of Electrotechnics of the Ukrainian Academy of Scien-
                ces, Kiyev Polytechnic Institute

PRESENTED BY:

SUBMITTED: 4 December 1956

AVAILABLE: At the Library of Congress

Card 3/3

AUTHOR: Zmorovich, V.A. (Kiev)   SOV/140-58-1-7/21

TITLE: On Some Questions of the Convergence Theory of Series With
             Positive Terms (O nekotorykh voprosakh teorii skhodimosti
             znakopolozhitel'nykh ryadov)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy Ministerstva vysshego
             obrazovaniya SSSR, Matematika, 1958, Nr 1, pp 60 - 79 (USSR)

ABSTRACT: The author explicitly deals with the older Russian papers of
             Yermakov [Ref 6-9] , Bugayev [Ref 1,2] and Bukreyev [Ref 3-5]
             concerning the convergence of series. The principal results
             consist in the proof of the necessity of the convergence con-
             dition of Yermakov and in the proof that a convergence cri-
             terion of Bugayev is nothing but a special case of a result of
             Schlömilch [Ref 13].
             Let the function $f(x)$ be unique, positive and continuous on
             $[1, + \infty)$; the integral
             $$\int_1^{\infty} f(x)dx \text{ and the series } \sum_1^{\infty} f(k) \text{ are}$$
             assumed to converge or diverge simultaneously.
             Let $\theta(x) \in E$ denote that there exists an $a > 0$, so that $\theta(x)$

Card 1/3

On Some Questions of the Convergence Theory of Series   SOV/140-58-1-7/21
With Positive Terms

is continuously differentiable on $[a, + \infty]$, $\theta'(x) > 0$, $\theta(x) > x$.
Let a property A be called almost immediately satisfied on
$(a, + \infty)$, if it is satisfied on $[b, + \infty]$, $b \geq a$.
With these denotations the above mentioned completion of the
theorem of Yermakov [Ref 6] reads as follows :
Theorem: For the convergence (Divergence) of the series

$$\sum_{1}^{\infty} f(k)$$

it is necessary and sufficient that there exists a $\theta(x) \in E$
and an α, $0 < \alpha < 1$, (an $A > 1$), so that on $[1, + \infty]$

$$f(\theta(x))\theta'(x) \leq \alpha\, f(x)$$
$$\left(f(\theta(x))\theta'(x) \geq A\, f(x) \right)$$

is satisfied almost immediately.
Altogether the paper contains 7 definitions, 7 lemmata and
10 theorems which in most cases are slight modifications of
well-known results. The last two sections have a somewhat po-
lemic character and deal with the investigation of Ostrovski
[Ref 14] published some years ago.
There are 14 references, 11 of which are Soviet, 2 German, and

Card 2/3